

## Claims:

1. A diffusion sheet for use in a transmission-type screen comprising a main diffusion layer having an incidence surface and an emergence surface which are parallel to each other,

the main diffusion layer diffusing a light, which is substantially perpendicularly incident on the incidence surface, in a diffusion direction to be emitted from the emergence surface,

a plurality of groove channels each having a substantially V-shaped cross-section being disposed in parallel to one another on the emergence surface of the main diffusion layer,

each groove channel being formed by two planes, curved surfaces, or bent planes which are joined to each other in the main diffusion layer,

a region sandwiched between the adjacent two groove channels providing a rib with a substantially trapezoidal cross-section, while the planes, curved surfaces, or bent planes which form each groove channel providing side surfaces of the rib,

the light substantially perpendicularly incident on the incidence surface being reflected on the side surfaces of the rib so that the light is diffused in the diffusion direction, wherein

an assisting diffusion layer is disposed on the side of the emergence surface of the main diffusion layer, or on both sides of the emergence surface and the incidence surface of the main diffusion layer, the assisting diffusion layer having a light diffusion component for diffusing a light at least in the same direction as the diffusion direction, and

the light diffusion component of the assisting diffusion layer is adjusted such that a gain curve of an emergent light from the diffusion sheet has no minimal

point.

2. A diffusion sheet according to claim 1, wherein  
a variation of an inclination of the gain curve of  
the emergent light is adjusted to be equal to or less  
than  $0.1 \text{ (cd/(m}^2 \cdot \text{lux)) / degree}$ .
3. A diffusion sheet according to claim 1, wherein  
a substantially transparent resin is filled in the  
groove channels of the main diffusion layer, the resin  
having a refractive index lower than that of a material  
forming the rib.
4. A diffusion sheet according to claim 3, wherein  
light absorption particles having a light absorbing  
function are dispersed in the resin.
5. A diffusion sheet according to claim 1, wherein  
the light diffusion component of the assisting  
diffusion layer disposed on the emergence surface of the  
main diffusion layer is formed of a diffusion material.
6. A diffusion sheet according to claim 1, wherein  
the assisting diffusion layer is further disposed  
on the incidence surface of the main diffusion layer,  
and  
the light diffusion component of the assisting  
diffusion layer disposed on the incidence surface of the  
main diffusion layer is formed of a lenticular lens.
7. A diffusion sheet according to claim 1, wherein  
the assisting diffusion layer is further disposed  
on the incidence surface of the main diffusion layer,  
and  
the light diffusion component of the assisting  
diffusion layer disposed on the incidence surface of the

main diffusion layer is formed of a prism lens.

8. A transmission-type screen comprising:

a diffusion sheet for use in a transmission-type screen including a main diffusion layer having an incidence surface and an emergence surface which are parallel to each other,

the main diffusion layer diffusing a light, which is substantially perpendicularly incident on the incidence surface, in a diffusion direction to be emitted from the emergence surface,

a plurality of groove channels each having a substantially V-shaped cross-section being disposed in parallel to one another on the emergence surface of the main diffusion layer,

each groove channel being formed by two planes, curved surfaces, or bent planes which are joined to each other in the main diffusion layer,

a region sandwiched between the adjacent two groove channels providing a rib with a substantially trapezoidal cross-section, while the planes, curved surfaces, or bent planes which form each groove channel providing side surfaces of the rib,

the light substantially perpendicularly incident on the incidence surface being reflected on the side surfaces of the rib so that the light is diffused in the diffusion direction, wherein

an assisting diffusion layer is disposed on the side of the emergence surface of the main diffusion layer, or on both sides of the emergence surface and the incidence surface of the main diffusion layer, the assisting diffusion layer having a light diffusion component for diffusing a light at least in the same direction as the diffusion direction, and

the light diffusion component of the assisting diffusion layer is adjusted such that a gain curve of an emergent light from the diffusion sheet has no minimal point; and

a Fresnel lens disposed on the side of the incidence surface of the diffusion sheet.